

# **AIR RESOURCES LABORATORY**

## **Silver Spring, Maryland**

### **Mission**

The Air Resources Laboratory (ARL) studies the atmosphere as a component of the total environment, primarily in the context of air pollution, deposition, emergency preparedness, and climate change; much of this work is conducted in collaboration with other agencies such as the Department of Energy (DOE), the Department of Defense (DOD), and the Environmental Protection Agency (EPA). ARL conducts research on processes that relate to air quality and climate, concentrating on the transport, dispersion, transformation, and removal of trace gases and aerosols, their climatic and ecological influences, and exchange between the atmosphere and biological and non-biological surfaces. The time frame of interest ranges from minutes and hours to that of the global climate. Research in all of these areas involves physical and numerical studies, leading to the development of air quality simulation models. ARL provides products to NOAA and other Government agencies in the form of scientific and technical advice, research publications, and prototype tools for operational application.

### **Brief History**

The Air Resources Laboratory started as the Special Projects Section of the U.S. Weather Bureau, in 1948. In 1963 (and until 1965), its name was changed to the Meteorological Research Projects Branch of the Weather Bureau. In 1965, the organization (including its field offices) was reconstituted as the Air Resources Laboratories, and most recently (1981) was redefined as a single Air Resources Laboratory. Present research units are in the following locations:

Headquarters Division - Silver Spring, MD  
Atmospheric Turbulence and Diffusion Division - Oak Ridge, TN  
Atmospheric Sciences Modeling Division - Research Triangle Park, NC  
Field Research Division - Idaho Falls, ID  
Special Operations and Research Division - Las Vegas, NV  
Surface Radiation Research Branch - Boulder, CO

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### Financial Profile (In thousands of dollars)

Fiscal Year	Permanent Funding	Other NOAA	****Non- NOAA	***Pass Through	TOTAL
FY 2001	3771.5	4560.5	11438.5	6670	26440.5
* FY 2002	8433.6	3902.7	12303.4	1642.5	26282.2
** FY 2003	10184	3611.2	12209.3	0	26004.5

#### NOTES:

\*Table sent out last year is base after corp. costs and centrally paid bills were taken out  
- that is why number is lower than FY 03

\*\*Target before corp. costs and centrally paid bills are taken out - to be consistent with Table 5

\*\*\*No pass thru funds in FY 03 - Project numbers are now direct-cited on the CIASTA requisition.

\*\*\*\*Used actual obligations for FY 02 and estimated actual obligations for FY 03.

### Personnel Data

FY	FEDERAL EMPLOYEES	JOINT INSTITUTE	Contractors	TOTAL
FY 2000	111	15	29	155
FY 2001	102	10	34	146
FY 2002	101	9	20	130
FY 2003	101	9	48	158

Average Age Federal/Scientific/Engineering and Technical Staff 50.1

Average Age of JI/Scientific/Engineering and Technical Staff 42

Federal Staff	PhD	25%	MS	36.60%
JI Staff	PhD	41%	MS	35%

**AIR RESOURCES LABORATORY  
PARTNERSHIPS**

PARTNERSHIPS	IDENTIFY (and explain)
JOINT INSTITUTES	<p>Boulder – CIRES - University of Colorado</p> <p>Las Vegas – CIASTA Cooperative Agreement</p> <p>Silver Spring – CILER - Lake Champlain Research Consortium</p> <p>Non-NOAA JIs – Oak Ridge Associated Universities - ORAU, through an IAG with the Dept. of Energy provides scientific, technical, and administrative support to ARL in Oak Ridge, Silver Spring, and Research Triangle Park.</p>

## PARTNERSHIPS WITH OTHER LABS

NOAA Laboratories: –

AL: Climate and air quality programs

CMDL: ARL programs on surface radiation.

FSL: Radiation programs.

GLERL: Lake Champlain earmark

GFDL: Climate and multi-media research

National (DOE and DHS) Laboratories --

DOE – Oak Ridge National Laboratory –  
ARL and ORNL collaborate on various environmental research projects including Mercury Studies in the Arctic and the Walker Ranch Watershed and CHESS tower sites, both in Oak Ridge, TN, as well as urban Homeland Security work.

DOE – Brookhaven National Laboratory –  
ARL and BNL are partnered in homeland security studies of New York City.

DOE – Argonne National Laboratory – ARL  
and ANL work together on the development of multimedia models and on homeland security issues related to subways.

DOE – Sandia National Laboratory – ARL  
works with Sandia on the integration of source term information into dispersion models.

DHS – Environmental Measurements  
Laboratory – ARL is a partner with EML in studies of dispersion in and around New York City.

OTHER OAR PROGRAMS	<p>OGP -- support for ARL Climate Variability and Trends programs, for Arctic studies, for SURFRAD, for GEWEX studies.</p> <p>Homeland Security – Support for READY system back-up.</p> <p>Office of Weather &amp; Air Quality – Development and deployment of an extreme turbulence probe for acquiring surface-based turbulent heat and momentum flux in hurricane-for wind and rain conditions and THORPEX, AIRMAP, Mexico Hurricane projects and Health of the Atmosphere</p> <p>Sea Grant – ecosystem studies</p>
OTHER NOAA RELATIONSHIPS	<p>ARL/Oak Ridge provides local data to NWS, and GEWEX data to NCEP. ATDD is working with NESDIS (OSD &amp; NCDC) on the US Climate Reference Network.</p> <p>ARL/Boulder works closely with NESDIS &amp; NCEP on various aspects of surface radiation and satellite ground truthing</p> <p>ARL/Research Triangle Park partners with the National Weather Service Centers for Environmental Prediction in the development and testing of an atmospheric modeling system for use in the routine provision of nationwide air quality forecasts. A prototype system (CMAQ), linked with NCEP's ETA model, has been developed and is being tested this summer by NCEP so that ozone forecasts can be issued in FY 04.</p> <p>ARL (most divisions) works closely with the Office of Homeland Security, National Weather Service, and NOS on homeland security related issues, NWS for dispersion and volcanic emission forecasts, NESDIS for forest fire smoke plume forecasts</p>

OTHER FEDERAL AGENCIES	<p>ARL works in partnership with many other agencies --</p> <p>DOE, NASA, Army, DTRA, EPA, US Forest Service (Oak Ridge)</p> <p>USDA, EPA, DOE, NREL (Boulder)</p> <p>EPA - (Research Triangle Park)</p> <p>DOE/NNSA (Las Vegas)</p> <p>DOE, DTRA, DOD (Army, Navy, Air Force), USGS, USFS, NPS (Idaho Falls)</p> <p>Various DOD agencies for national security issues, CIA, FBI, SS, USDA, NASA, VA, USDA (Silver Spring)</p>
STATE AGENCIES	<p>Close association is maintained with many state agencies, including –</p> <p>Tennessee, Dept of Air Quality</p> <p>Idaho INEEL Oversight and Dept of Environmental Quality</p> <p>Florida DEP for the Bay Region Atmospheric Chemistry Experiment</p> <p>Vermont DEC for air quality programs along the Canadian border.</p> <p>DC Council of Governments for homeland security applications</p>
LOCAL PARTNERSHIPS	<p>ARL-wide. ARL divisions maintain direct associations with local authorities, often in the context of the provision of specialist dispersion support in the event of emergencies.</p>

UNIVERSITY PARTNERSHIPS	<p>Major associations:</p> <p>Universities of – Alabama, Delaware, Tennessee, Wisconsin, Maryland, Colorado, Vermont, Illinois, California, Texas, Nevada</p> <p>The State Universities of New York, The State University of North Carolina, Duke University Rutgers University Harvard University Georgia Tech,. Colorado State University North Carolina State University Colorado School of Mines BYU Idaho Idaho State University Pennsylvania State University Cornell University St. Lawrence University Florida A &amp; M Howard University City College of New York Jackson State Clark University of Atlanta</p>
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